

Referral Review by NIMA/DoD

7 June 1968

NRO review(s) completed.

MEMORANDUM FOR: Mr. Edward W. Proctor

SUBJECT: Comments on General Reynolds'

MC&G Study - *in this file - 9 May 68*

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1. Thank you for allowing me to see General Reynolds' study. It is a clear and readable exposition of a very complex problem. It would form an excellent background briefing for somebody anxious to learn the main technical and managerial problems of current U.S. mapping and charting programs. On the other hand, the paper contains several distortions (which I am sure can be clarified), and I do not agree with its analysis of issues or proposed courses of action.

2. The issues I have in mind are:

a. The "free ride" concept.


The paper alleges that the actual cost of producing satellite photography for the MC&G program is not now fully identifiable, in part because the "free ride" philosophy has contributed to a lack of a systematic accounting of costs attributable to mapping, charting, and geodesy. I would agree with General Reynolds that it would be desirable to identify the developmental and programming actions which are primarily in support of mapping, charting, and geodesy and even to extend accountability so as to include all elements of satellite reconnaissance supporting this program. I believe,

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however, that the "free ride" concept has advantages that have been overlooked in the study. Under the "free ride" concept, the requirement for satellite reconnaissance missions is established on the basis of intelligence needs other than mapping, charting, and geodesy. Once the program has been developed, the reconnaissance capability generated is then examined to see how it can be applied to meet mapping, charting, and geodesy, and for that matter other needs, without interference to fulfillment of the requirements on which the program was originally based. This concept has developed as a result of our experience with the  program.

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On 14 April 1965, USIB approved a program to acquire satellite photography for MC&G purposes 

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b. Geodetic accuracy vs map accuracy.

A technical point on which General Reynolds' study appears to be somewhat confused at times is the relationship between "geodetic accuracy" and "mapping accuracy". The main discussion of this point seems clear, but since the study criticizes us for lack of adequate attention to "accuracy" let me review the problem. The former pertains to the accuracy of individual points as related to a unified world-wide network of geodetic control, as opposed to the latter, which pertains to the accuracy of the relative positions of two or more points to each other in a local sense, not necessarily with reference to the world geodetic network, or even to an established local datum. Map accuracy is of considerable importance to people who fire artillery and short-range surface-to-surface missiles, drop bombs, and carry out engineering studies based on maps. Geodetic accuracy, on the other hand, is of little concern to these classes of people but is of great concern to those involved with the firing of long-range missiles against targets that may lie on other continents.

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It is clear that the present relationship between the intelligence community at large and those responsible for originating statements of requirements for geodetic and map accuracies is not sufficiently close to provide for maximum understanding and efficiency. In spite of this organizational defect we have worked very hard to understand the MC&G problems and consider their impact on the NRP. In the light of the foregoing, I take particular issue with General Reynolds' statement that "...in approving new accuracy requirements, there has been insufficient attention given to the possible impact such action would have on collection resources." I feel particularly strongly on this point inasmuch as our 25 July 1966 statement of MC&G requirements contained the recommendation that "the NRO be requested to provide COMOR with information on those specific requirements that could be exceeded appreciably at negligible cost increase and on those specific requirements which, if reduced, would result in substantial program savings or in improvements in other requirement areas."



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c. Separation of MC&G from intelligence.

General Reynolds' study proposes that MC&G requirements of a "military operational nature" be separately identified from those MC&G requirements of direct interest to the intelligence community, that they be approved without intelligence community participation, and that costs for them be allocated elsewhere. The study does not define what is meant be "military operational nature" in this context. In my view, MC&G is an inextricable part of intelligence. In the light of the intertwining of intelligence and mapping, I do not see how it would be possible to separate mapping requirements of a purely military operational nature.



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3. The foregoing discussion leads to two issues mentioned briefly by General Reynolds which I believe to be of primary importance in improving the U.S. mapping and charting program. These are:

a. Formulation of requirements for map and chart coverage.

Because the military are the producers and the traditional primary users of terrain maps and navigational charts, the system of deciding what maps and charts of what areas and at what scales has been allowed to grow up inside the Department of Defense without adequate



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participation by the rest of the intelligence community. Inasmuch as the intelligence community is organized to focus a high order of intellect and experience on estimates of future developments, I see no reason why the same level of intellect and experience could not also make a valuable contribution to decisions affecting future needs for maps and charts. I strongly recommend that this be attempted.

b. Technical Requirements.

Decisions concerning maps to be produced cause the development of a series of technical requirements affecting the manner, form, and volume of information to be collected to support the map production program. At the present time the intelligence community at large does not participate to an adequate extent in the formulation of these technical requirements. We do not normally become involved in these requirements until somebody in the Department of Defense map production arena decides that the requirements cannot be fulfilled by assets under unilateral Department of Defense control and brings the requirement to the intelligence community for fulfillment by assets controlled by it. This has led to a number of difficulties in understanding and reduces the possibility of making cost-effective decisions. In fact this is one of the factors that had led indirectly to General Reynolds' being asked to carry out his study.

I feel that both of these issues are of great importance and that they cannot be swept under the rug through some artificial division of the mapping effort. I think that General Reynolds' study would be of far greater utility if it would suggest ways in which these two problems could be solved in a positive manner.

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8. With respect to the conclusions and recommendations:


a. I have already commented at length on Conclusion 1 and its recommendation with which I cannot agree.

b. I concur with the intent of Conclusion 2, but feel that there needs to be clarification in the definition of "critical need" as contrasted with "useful-to-have" recoverage requests. Except for this one reservation, the recommendation appears acceptable, since it does not prohibit low-priority coverage for MC&G when the opportunity arises.

c. Earlier in this memorandum, I commented in some detail on the points brought up in Conclusion 3, stressing the advantages of pooling all requirements to avoid artificial constraints and inefficiencies in operating our reconnaissance systems. For purposes of identifying the cost allocable to MC&G participation, the recommendations stemming from Conclusion 3 seem logical and would be useful. I feel strongly, however, that the COMIREX should continue to work with the NRO in determining the film used in fulfilling MC&G as opposed to other intelligence requirements.


d. With respect to Conclusion 4, attention is called to the first paragraph under IV 5 (page 20) as a statement of intelligence requirements within the mapping and charting fields. The most clean-cut solution to the problem posed in Conclusion 4 would be to adopt procedure "a", which would establish MC&G as an intelligence mission (including its military operational requirements and conventional collection resources, exclusive of R&D). Procedure "b" puts the burden on the Department of Defense to differentiate between the elements within the CIP that are of an intelligence nature and those

of a military operational nature. The implication is that the military operational elements of MC&G programs would not be budgeted as part of the over-all intelligence program. If any action regarding the problem posed by Conclusion 4 is in fact demanded by the Director, procedure "a" has advantages to which I referred earlier. As implied elsewhere in this memorandum, the study's recommendation would be very difficult to implement, partly because of the variety of uses made of MC&G products. I therefore do not agree with this recommendation.


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